

**MATERIALS SPECIFICATION
FOR
TAPPING VALVES - MECHANICAL JOINT TYPE**

1. General:

All valves supplied under this Specification shall be designed and manufactured in accordance with AWWA C500 or AWWA C509 or AWWA C515, with the following additional requirements or exceptions.

2. Valve Description:

Valves shall be iron body, double-disc gate valves, fully bronze-mounted, with parallel seats; or resilient seated gate valves. If the resilient seats are bonded to the gates, the gates shall be totally encapsulated with the material, with the exception of any guide tabs or slots. All valves shall have non-rising stems.

3. Installation:

Valves will be installed with the stem vertical in buried horizontal water lines without gearing, by-passes, rollers or tracks.

4. Service:

All valves shall be suitable for frequent operation as well as service involving long periods of inactivity. Valves shall be capable of operating satisfactorily with flows in either direction. The operating pressure for all sizes shall be 200 psig.

5. Valve Stem:

Resilient seated gated valves shall be supplied with stems having a minimum yield strength of 40,000 psi and a minimum elongation in 2 inches of 12% and shall be made of bronze per ASTM B 763, Copper Alloy No. C99500 or stainless steel per ASTM A 276, Type 304 or 316; or AISI 420.

Valves shall be furnished with 2 inch square wrench nuts. The wrench nut shall comply with 3.15 of AWWA C500. Stem seal shall consist of two (2) O-rings in accordance with 3.12 of AWWA C500 or Section 4.8 of AWWA C509. Valves shall open by turning in the direction specified in the Bill of Materials.

6. Bolting Material:

Bonnet and gland bolts and nuts shall be either fabricated from a low alloy-steel for corrosion resistance, or electro-plated with zinc or cadmium. The hot-dip process in accordance with ASTM A 153 is not acceptable.

7. End Connections:A. Inlet End of Valve:

Inlet end of the valve shall be flanged. All dimensions and drilling of this flange shall conform to ANSI B16.1, Class 125.

B. Outlet End of Valve:

Outlet end of the valve shall have a standard mechanical joint end conforming to AWWA C111. The face of the mechanical joint shall have a sufficiently smooth and even surface to allow a tight O-ring seal with the tapping equipment. Accessories for the mechanical joint consisting of the gasket, gland and fasteners shall be furnished. The tee-head bolts and hexagon nuts shall be fabricated from a high-strength low alloy steel known in the industry as Cor-Ten, Usalloy, ductile iron Durabolt or equal. Both ends of the valve shall be covered for shipment, and the mechanical joint accessories shall be packed inside the body of the valve.

8. Seat Ring Size:

Body of the valve and seat opening shall be sized large enough to accommodate the following sizes of shell cutters:

<u>Tapping Valve Nominal Diameter</u>	<u>Shell Cutter Diameter</u>
4"	3 7/8" \pm 1/32"
6"	5 13/16" \pm 1/32"
8"	7 7/8" \pm 1/32"
10"	9 3/4" \pm 1/32"
12"	11 7/8" \pm 1/32"

9. Testing:

Each valve, after shop assembly, shall be given the operation and hydrostatic tests in accordance with AWWA C500 or AWWA C509 or AWWA C515.

10. Painting:

All valves shall be painted or coated in accordance with 3.21 of AWWA C500, Section 5.2 of AWWA C509, or Section 4.5.2 of AWWA C515. Machined flange faces shall be evenly coated with a rust preventative compound.

11. Certification:

The manufacturer shall furnish a sworn statement that the inspection and all of the specified tests have been made and the results thereof comply with the requirements of the applicable Standard(s) herein specified. A copy of the Certification including compliance with NSF Standard 61 shall be sent to Denver Water.

12. Acceptable Manufacturers:

Double-Disc
Mueller
Clow

Resilient Seated
American AVK
Mueller
Clow
Kennedy
U.S. Pipe & Foundry